U.S.Department of Transportation
Federal Aviation Administration

# Advisory Circular

**Subject:** SPECIFICATION FOR WIND CONE ASSEMBLIES

**Date:** 7/19/85 **Initiated by:** AAS-200

**AC No:** 150/5345-27C
**Change:**

1. PURPOSE. This advisory circular (AC) contains a specification for wind cone assemblies to be used to provide wind information to pilots of aircraft.

2. CANCELLATION. AC 150/5345-27B, Specification for Wind Cone Assemblies, dated March 19, 1982, is cancelled.

3. PRINCIPAL CHANGES. The following principal changes have been made in this AC:

a; The specification has been revised to provide for full wind cone extension in a 15 knot (28 km/hr) wind.

b. The use of a coated fabric has been added.

4. APPLICATION. The specification contained herein is recommended by the Federal Aviation Administration in all applications involving airport development of this nature. The specification is an acceptable means for compliance with Federal Aviation Regulation (FAR) Part 152 for projects funded under the Airport Improvement Program or with FAR Part 139 where such facilities may be required; Where alternate means are proposed, it must be demonstrated that equivalent levels of performance, safety, and for Federally funded projects, equivalent cost effectiveness, are achieved.

5. METRIC UNITS. To promote an orderly transition to metric units, this specification includes both English and metric dimensions. The metric conversions may not be exact equivalents and until there is an official changeover to the metric system the English dimensions will govern.

Leonard E. Mudd

LEONARD E. MUDD
Director, Office of' Airport Standards

# SPECIFICATION FOR WIND CONE ASSEMBLIES

## 1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers fabric wind cones and their supporting structures used at airports and heliports to indicate surface wind conditions.

1.2 Classification.

1.2.1 Types.

L-806 - those mounted on low mass supporting structures (typical assemblies are shown in figure 1)

L-807 - those mounted on rigid supporting structures (typical assemblies are shown in figure 2)

1.2.2. Styles.

Style I - lighted

Styles II - unlighted

1.2.3 Sizes.

Size 1 - 8 feet (2.5 m), for use with Type L-806 and L-807 assemblies.

Size 2 - 12 feet (3.75 m), for use with Type L-807 assemblies.

## 2. APPLICABLE DOCUMENTS

2.1 General. The following documents, of the issue in effect on the date of application for qualification, form part of this specification and are applicable to the extent specified herein.

2.2 Federal Aviation Administration (FAA) Advisory Circulars.

| | |
|---|---|
| AC 15015345-l | Approved Airport Lighting Equipment |
| AC 150/5345-43 | Specification for Obstruction Lighting Equipment |
| AC 150/5345-45 | Lightweight Approach Light Structure |

2.3 Federal Standard.

| | |
|---|---|
| FED-STD 191 | Textile Test Methods |

3.3 Framework. A framework shall be provided to hold the throat of the fabric cone fully open under no wind conditions and to provide an interface with the support. It shall be of low-mass design so as to offer minimum resistance to an inadvertent strike by aircraft. The framework may be made of metallic or nonmetallic material. Ferrous materials shall be hot-dipped galvanized, zinc plated, or epoxy-resin coated to provide protection against corrosion. The framework is to be constructed so as to deter the accumulation of water in the wind cone. The framework shall support the fabric cone in a rigid position for three-eighths of its length. When the fabric cone is attached to the framework the combination shall perform as a wind vane. Bearings, bushings, or like devices shall be either permanently lubricated or provided with fittings to allow periodic lubrication.

3.4 Supporting Structures. Typical supporting structures are shown in figures 1 and 2. Although the illustrations are typical, the dimensions shown are to be complied with.

3.4.1 Type L-806. The type L-806 support shall be of a low-mass design. When firmly anchored, the support shall withstand a moment of 350 pound-feet (475 N m) without damage and fail before a moment of 700 pound-feet (950 N m) is reached by a force applied parallel to and 6 feet (1.8 m) above the surface to which the support is attached. Alternatively, a support meeting the requirements of AC 150/5345-45, Lightweight Approach Light Structure, may be used.

3.4.2 Type L-807. The type L-807 support may be hinged at its base or near its middle so the wind cone and light fixture can be serviced from the ground. When the support is mounted in place, it shall withstand, without damage, a moment of not less than 3200 pound-feet (4340 N m) when the force is applied parallel to and 16 feet (4.8 m) above the surface to which the support is attached.

3.5 Cone Movement. The wind cone shall move freely about the vertical shaft it is attached to and when subjected to wind of 3 knots or more indicate the true wind direction within ±5 degrees.

3.6 Illumination. Style I wind cone assemblies shall be supplied with sufficient light fixtures to provide a minimum of 2 foot-candles. (21.5 lux) illumination on any point of the horizontal plane described by the complete rotation of the upper surface of a fully extended cone. Light fixtures shall be placed and aimed to minimize objectionable glare to aircraft pilots. Wiring from the base of the supporting structure to the light fixture shall be housed in the structure or in electrical conduit. Electrical cable shall be of proper type and size for this application.

3.7 Obstruction Light. Optionally, an L-810 obstruction light conforming to AC 150/5345-43, Specification for Obstruction Lighting Equipment, may be supplied. The obstruction light is to be mounted at the highest point of the wind cone assembly to avoid being obscured by any other part when viewed from above.

3.8 Painting. All exposed metal parts of the wind cone assembly, except reflecting surfaces of light fixtures, shall be given one prime, one body, and one finish coat of paint. The prime coat shall be appropriate for the particular metal being painted. The finish coat shall consist of a nonfading orange color paint.

4.2.4 Cone Movement. Test the cone movement around the vertical axis. The cone shall move freely and align with a 3-knot (5.6 km/hr) wind. The wind test shall be run at no less than 6 equally spaced points about the vertical axis.

4.2.5 Illumination. The illumination shall be tested at the throat, trailing end, and center points of the upper surface of the extended fabric wind cone at t 30-degree intervals throughout a complete horizontal rotation of the wind cone. The illumination at the test points shall not be less than the 2 foot-candles in paragraph 3.6.

4.2.6 Cone Extension. Test the wind cone to assure that it extends fully when subjected to a wind of 15 (+2, -1) knots (+3.7, -1.8) km/hr).

4.2.7 Cone Fabric. Supply a certification from the fabric manufacturer that the fabric meets the requirements in paragraph 3.2.3.

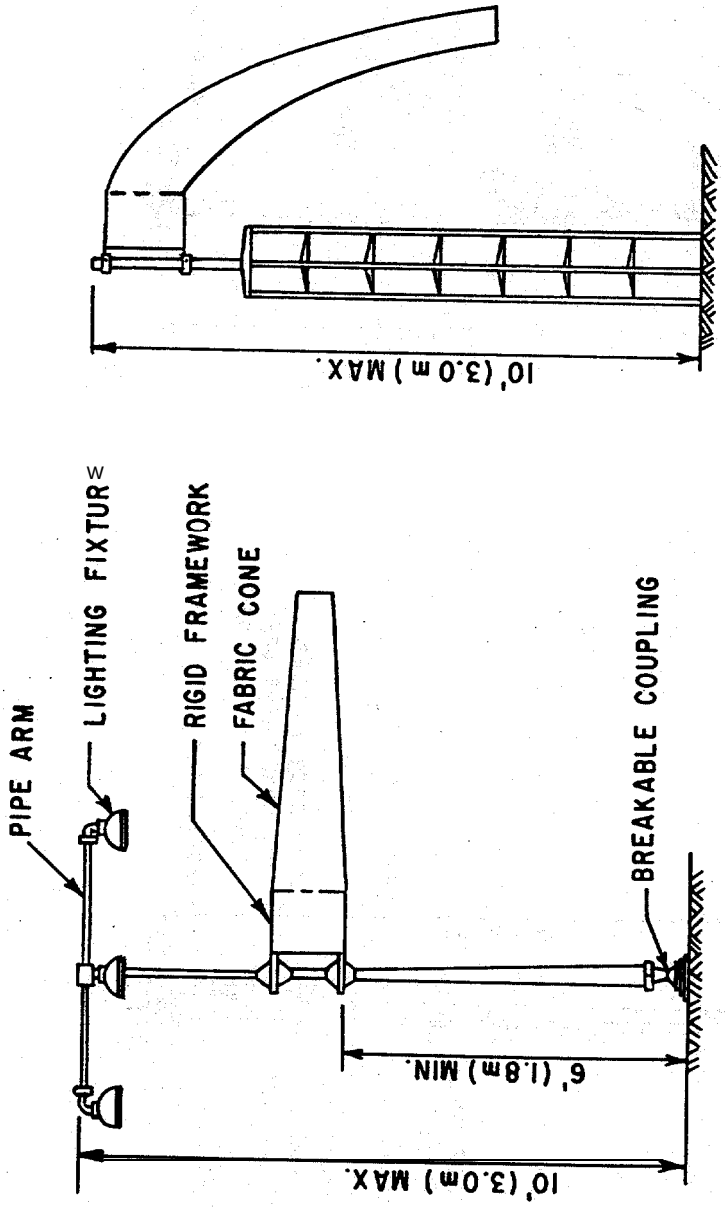


Figure 1. Typical Type L-806 supports.